



Application No.: 09/781,073

AMENDMENTS TO THE CLAIMS

Claims 1-12 (Cancelled).

Claim 13. (Currently Amended): A method of drilling a hole in a material, said hole to have a diameter, comprising, the steps of:

generating a first high power percussive laser beam, said high power percussive laser beam being focused to a diameter slightly smaller than said diameter of said hole,

directing said first high power percussive laser beam at the said material to remove the bulk of the said material to form a ragged hole having a diameter slightly smaller than said diameter of said hole and begin forming a final hole,

generating a second trepanning laser beam, said second trepanning laser beam having a spot diameter substantially smaller than said diameter of said hole, and

directing and trepanning said second trepanning laser beam at said hole being formed for accurately cleaning up said ragged hole so that said final hole has said diameter and has dimensions of high precision.

Claim 14 (Original): The method of drilling a hole in a material of claim 13 wherein said first laser beam is an infra-red laser beam.

Claim 15 (Original): The method of drilling a hole in a material of claim 13 wherein said second laser beam is a low power, short wavelength laser beam.

Claim 16 (Original): The method of claim 14 wherein said infra-red laser beam is produced by a laser operated in the ablative mode.

Claim 17 (Original): The method of claim 15 wherein said low power, short wavelength laser beam is produced by a laser operated in the trepanning mode.

Claim 18 (Original): The method of drilling a hole in a material of claim 13 wherein said first laser beam is an infra-red laser beam and said second laser beam is a low power, short wavelength laser beam.

Claim 19 (Original): The method of drilling a hole in a material of claim 13 wherein said second laser beam laser is focused to a spot much smaller than the diameter of said ragged hole and said second laser beam is traced around the said ragged hole a multiplicity of times until there is little ragged material on the sides of said ragged hole.

Claim 20 (Original): The method of drilling a hole in a material of claim 19 wherein said second laser beam laser is used to polish the sides of said hole to obtain high dimensional precision.

Claim 21 (Original): The method of drilling a hole in a material of claim 13 wherein said first laser beam is produced by a first laser and said second laser beam is produced by a second laser.

Claim 22 (Original): The method of drilling a hole in a material of claim 13 wherein said first laser beam and said second laser beam are produced by a single laser.

Claim 23 (Original): The method of drilling a hole in a material of claim 13 including controlling said first laser beam for rapidly removing the bulk of

material in an area to form a ragged hole so that the final hole does not extend entirely through said material.

Claim 24 (Original): The method of drilling a hole in a material of claim 23 including controlling said first laser beam so that the final hole does not extend entirely through said material and said first laser beam leaves a thin membrane at the bottom of said hole.

Claim 25 (Original): The method of drilling a hole in a material of claim 24 including controlling said second laser beam so that said second laser beam breaks through said thin membrane at the bottom of said hole.

Claims 26-34 (Cancelled).